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September 8, 2004

CERTIFICATE OF MAILING
37 C.F.R 1.8

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September 8, 2004 — Date
Michael C. Barrett

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

RE: *U.S. Patent Application No. 10/779,319 entitled "EXTENDED DEPTH OF FOCUS MICROSCOPY" – Michael E. Dresser and Jose-Angel Conchello*
Our reference: OMRF:014US
Client reference: 2002-011-001

Sir:

Enclosed for filing in the above-referenced patent application is an Information Disclosure Statement, Form PTO-1449, and references A1 and C1-C38.

No fees are believed to be due in connection with the filing of this Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to the enclosed materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/OMRF:014US.

Please date stamp and return the enclosed postcard evidencing receipt of these materials.

Respectfully submitted,

Michael C. Barrett
Reg. No. 44,523

MCB/kmv
Encl.: as noted

25449876.1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Michael E. Dresser
Jose-Angel Conchello

Serial No.: 10/779,319

Filed: February 13, 2004

For: EXTENDED DEPTH OF FOCUS MICROSCOPY

Group Art Unit: 2621

Examiner: Unknown

Atty. Dkt. No.: OMRF:014US

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Michael C. Barrett

INFORMATION DISCLOSURE STATEMENT

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

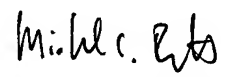
In accordance with 37 C.F.R §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be

an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/OMRF:014US.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



Michael C. Barrett
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600 Congress Avenue, Suite 2400
Austin, Texas 78701
(512) 474-5201

Date: September 8, 2004

Form PTO-1449 (modified)	Atty. Docket No. OMRF:014US	Serial No. 10/779,319
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant Michael E. Dresser Jose-Angel Conchello	
	Filing Date: February 13, 2004	Group: 2621

U.S. Patent Documents	Foreign Patent Documents	Other Art
See Page 1	*See Page 1*	*See Page 1*

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	5,047,968	9/10/91	Carrington *et al.*	364	574	3/20/90

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	"Computational optical sectioning microscopy of live cardiomyocytes," Computational Optical Sectioning Microscopy, htt;://216.239.57.1.../fmnotes.html+deconvolution+otf+psf+ introduction&hl=en&ie=UTF, printed January 8, 2003.
	C2	Agard, "Optical sectioning microscopy", *Ann. Rev. Biophys. Bioeng,* 13:191-219, 1984.
	C3	Carrington *et al.*, "Superresolution three-dimensional images of fluorescence in cells with minimal light exposure," *Science*, 268:1483-1487, 1995.
	C4	Carrington, "Image restoration in 3D microscopy with limited data" in SPIE Vol 1205 *Bioimaging and two-dimensional spectroscopy* L. C. Smith, editor SPIE press., 72-83, 1990.
	C5	Christou, "Deconvolution algorithms," *Center for Adaptive Optics.*
	C6	Conchello and Yu, "Parametric blind deconvolution of fluorescence microscope images: Preliminary results," in *Three-Dimensional microscopy: image acquisition and processing* C. J. Cogswell, G. S. Kino, and T. Wilson, editors, Proceedings of the SPIE 2655, 164-174, 1996.
	C7	Conchello and McNally "Fast regularization technique for expectation maximization algorithm for computational optical sectioning microscopy," in *Three-Dimensional microscopy: image acquisition and processing III*, C. J. Cogswell, G. Kino, and T. Wilson, editors. Proc. SPIE 2655:199-208, 1996.
	C8	Conchello and McNally, "Subpixel resolution in maximum likelihood image restoration" in *Three-Dimensional microscopy: image acquisition and processing IV*, C. J. Cogswell, J. A. Conchello, and T. Wilson, editors. Proc. SPIE 2984:158-168, 1997.

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	C9	Conchello *et al.*, "Enhanced 3-D Reconstruction from Confocal Scanning Microscope Images. II: Depth Discrimination vs. Signal-to-Noise Ratio in Partially Confocal Images," *Appl. Opt.-Information Processing*, 33(17):3740-3750, 1994.
	C10	Conchello, "Super-resolution and convergence properties of the expectation maximization algorithm for maximum-likelihood deconvolution of incoherent images," *Journal of the Optical Society of America-A*, 15(10):2609-2619, 1998.
	C11	Conchello, and Hansen "Enhanced 3-D reconstruction from confocal scanning microscope images. I: Deterministic and maximum likelihoodreconstructions," *Applied Optics*, 29(26):3795-3804, 1990.
	C12	Fay *et al.*, "Three-dimensional Molecular Distribution in Single Cells Analyzed Using the Digital Imaging Microscope," *Journal of Microscopy*, 153:133-149, 1989.
	C13	Holmes "Expectation-maximization restoration of band limited, truncated point-process intensities with application in microscopy" J. Opt. Soc. Am.-A 6(7) pp1006-1014 (1989).
	C14	Holmes and Liu "Acceleration of maximum-likelihood image restoration for fluorescence microscopy and other noncoherent imagery," *J. Opt. Soc. Am.-A*, 8(6):893-907, 1991.
	C15	Holmes *et al.* "Light microscopic images reconstructed by maximum likelihood deconvolution" Chapter 24 in *Handbook of biological confocal microscopy*, 2nd edition, J. B. Pawley, editor, 389-402, 1995.
	C16	Holmes Liu "Richardson-Lucy/maximum likelihood image restoration algorithm for fluorescence microscopy: further testing" Appl. Opt. 28 (22) pp4930-4938 (1989)
	C17	Holmes, "Maximum-likelihood image restoration adapted for noncoherent optical imaging," *Journal of the Optical Society of America A*, 5(5):666-673, 1988.
	C18	Liu and Holmes, "2D and 3D fluorescence microscopy by maximum likelihood estimation: Micrograph results," *Microscopy Society of America Bulletin*, 23(2):189-198, 1993.
	C19	Loew *et al.*, "Imaging in five dimensions: Time-dependent membrane potentials in individual mitochondria," *Biophysical Journal*, 65(12):2396-2407, 1993.
	C20	Malkusch *et al.*, "Digital light microscopy: Prerequisite for optimum enhancement and increase of resolution," *Experimental Gerontology*, 36:1199-1217, 2001.

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	C21	Markham and Conchello, "Fast maximum-likelihood image restoration algorithms for three-dimensional fluorescence microscopy," *Journal of the Optical Society of America-A.*, 18(5): 1062-1071, 2001.
	C22	Markham and Conchello, "Parametric blind deconvolution: a robust method for the simultaneous estimation of image and blur," J. Opt. Soc. Am. A., 16(10):2377-2391, 1999.
	C23	Markham and Conchello, "Tradeoffs in regularized maximum-likelihood image restoration," in Three-Dimensional Microscopy: Image Acquisitionand Processing IV. C Cogswell, J. A. Conchello, and T. Wilson Editors. Proc. SPIE 2984-18:136-145, 1997.
	C24	Rizzuto *et al.*, "Digital imaging microscopy of living cells," Trends in Cell Biology, 8(7):288-292, 1998.
	C25	Schaefer *et al.*, "Generalized approach for accelerated maximum likelihood based image restoration applied to three-dimensional fluorescence microscopy" *Journal of Microscopy*, 204(2):99-107, 2001.
	C26	Van der Voort, "Theory and practice of 3D image restoration," *Scientific Volume Imaging B.V.*, 1-38, Hilversum, Netherlands.
	C27	Van Kempen *et al.*, "Application of image restoration algorithms for confocal fluorescence microscopy" in *Three-dimensional microscopy: Image acquisition and processing,* IV C. J. Cogswell, J.-A. Conchello, and T. Wilson, Editors Proc. SPIE 2984:114-124, 1997.
	C28	van Kempen *et al.*, "Comparing maximum likelihood estimation and constrained Tikhonov-Miller restoration as applied to confocal microscopy," *IEEE Engineering in Medicine and Biology*, 76-83, 1996.
	C29	Verveer and Jovin "Acceleration of the ICTM image restoration algorithm" *Journal of Microscopy*, 188 (part 3):191-195, 1997.
	C30	Verveer and Jovin "Efficient superresolution restoration algorithms using maximum a posteriori estimations with applications to fluorescencemicroscopy" Journal *of the Optical Society of America-A*, 14(8):1696-1706, 1997.
	C31	Verveer and. Jovin "Image restoration based on Good's roughness penalty with application to fluorescence microscopy," *J. Opt. Soc. Am.-A*, 15(5):1077-1083, 1998.
	C32	Verveer and. Jovin "Improved restoration from multiple images of a single object: application to fluorescence microscopy," *Applied Optics*, 37(26): 6240-6246, 1998.

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	C33	Verveer *et al.*, "A comparison of image restoration approaches applied to three-dimensional confocal and wide-field fluorescence microscopy," *Journal of Microscopy*, 183 (1):60-61, 1999.
	C34	Verveer *et al.*, "Superresolution MAP algorithms applied to fluorescence imaging," in *Three-dimensional microscopy: Image acquisition and processing* IV C. J. Cogswell, J.-A. Conchello, and T. Wilson, Editors. *Proc. SPIE*, 2984:125-135, 1997.
	C35	Verveer *et al.*, "Theory of confocal fluorescence imaging in the programmable array microscope (PAM)," *Journal of Microscopy*, 189(3):192-198, 1998.
	C36	Häusler and Körner, "Imaging with expanded depth of focus," *Zeiss Inform.*, 29:9-13, 1986.
	C37	Häusler, "A method to increase the depth of focus by two step image procesing," *Optics Communications*, 6(1):38-42, 1972.
	C38	Holmes *et al.*, "Increased depth of field and stereo pairs of fluorescence micrographs via inverse filtering and maximum-likelihood estimation," *Journal of Microscopy*, 164(pt 3):217-237, 1990.

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